

FIG. 3

formed film indication	1 (2)	3 (4)	5 (6)	7 (8)	9 (10)	11 (12)	13 (14)
formed film type	Low-k	Low-k	barrier	barrier	barrier	barrier	barrier
H_2O	○	○	○	○	○	○	○
silicon-contained organic compound	○	○	○	○	○	○	○
C_xH_y , $C_xH_yF_z$, $C_xH_yB_z$	(○)	(○)	(○)	(○)	(○)	(○)	(○)
N_2O				○			○
NH_3				○			○
N_2					○		
plasma process	○						
annealing process		○					
surface layer removing process	(○)	(○)					
waterproof process	(○)	(○)					

Note 1) "Low-k" in the formed film type column denotes the low-dielectric insulating film, and "barrier" denotes the barrier insulating film.

Note 2) (○) in the $CxHy$, $CxHyFz$, and $CxHyBz$ columns represents both cases where $CxHy$, $CxHyFz$, or $CxHyBz$ is added and is not added.

Note 3) (○) in the surface layer removing process column and the waterproof process column represent both cases where the concerned process is applied and is not applied.

Note 4) Regarding the barrier insulating film, as the case may be, the plasma process in the plasma process column and annealing process in the annealing process column may be applied. In addition, the waterproof process in the waterproof process column may be applied.